CN SAMPLE QUESTIONS

1. Baseband transmission of a digital signal is possible only if we have a ____ channel
a. low-pass
b. band-pass
c. low rate
d. high rate

2. If the bandwidth of a signal is 5 KHz and the lowest frequency is 52 KHz, what is the highest frequency?
a. 5 KHz
b. 10 KHz
c. 47 KHz
d. 57 KHz

3. Why was OSI developed?
a. Manufacturers disliked the TCP/IP protocol.
b. The rate of data transfer was increasing exponentially.
c. Standards were needed to allow any two computers to communicate.
d. None of the above.

4. Encryption takes place at which layer?
a) Physical
b) Presentation
c) Application
d) Session

5. Which layer is responsible for packet sequencing, acknowledgements, & requests for retransmission?
a) Network
b) Session
c) Transport
d) Data Link
e) Presentation

6.

A. Sending ones and zeros across a wire, fiber, etc.	i. Data link layer
B. Organizing the ones and zeros into chunks of data and getting them safely to the right place on the wire.	ii. Network layer
C. Passing data chunks over multiple connected networks	iii. Physical layer
D. Delivery of the data to the right software application at the destination.	iv. Transport layer

Match the columns:
a) A-iii, B-i, C-ii, D-iv.
b) A-i, B-ii, C-iii, D-iv.
c) A-iii, B-i, C-iv, D-ii
d) None of the above.

7. Which of the following are benefits of using a layered network model?
A) It facilitates troubleshooting
B) It breaks the complete process of networking into more manageable chunks.
C) It allows layers developed by different vendors to interoperate.
D) All of the above

8. You are working with graphic translations. Which layer of the OSI model is responsible for code formatting and conversion and graphic standards?
A) Network layer
B) Session layer
C) Transport layer
D) Presentation layer
9. Communication via circuit switching involves three phases which are

a) circuit establishment, data transfer, circuit disconnect
b) Circuit establishment, data compression, circuit disconnect
c) data transfer, data compression, circuit disconnect
d) None of the above

10.(i) Twisted-pair can be used for both analog and digital communication.
(ii) Broadband Coaxial refers to analog transmission over coaxial cable
Identify whether the statements (i) and (ii) are true or not?
a) (i) is true
b) (ii) is true
c) Both the statements are true
d) None is true

11. A "base band coaxial" consists of the various components. The correct order from the innermost to the outermost component is:
a. Copper wire, insulator, braided outer conductor, protective outer covering.
b. Protective outer covering, braided outer conductor, insulator, copper wire
c. Copper wire, braided outer conductor, insulator, protective outer covering
d.None
12. Two channels, one with a bit rate of 100 kbps and another with a bit rate of 200 kbps, are to be multiplexed. How this can be achieved?
a. We can allocate 1 slot for first channel and 2 slots for second channel
b. We can allocate 2 slots for first channel and 1 slot for second channel
c. Both a and b are possible
d.None of the above

13. In the _____method, a station that has a frame to send senses the line. If the line is idle, it sends immediately. If the line is not idle, it waits a random amount of time and then senses the line again.
A. non persistent
B. 1-persistent
C. p-persistent
D. none of the above

14. What is the Hamming distance for each of the following codewords:
a. d (10000, 00000) 1. 1
b. d (10101, 10000) 2. 0

c. d (11111,11111) 3. 2
d. d (000, 000)

a) a-1,b-0,c-0,d-0
b) a-1,b-1,c-0,d-0
c) a-1,b-2,c-0,d-0
d) None of the above.

15. Using 5-bit sequence numbers, what is the maximum size of the send and receive windows for each of the following protocols?

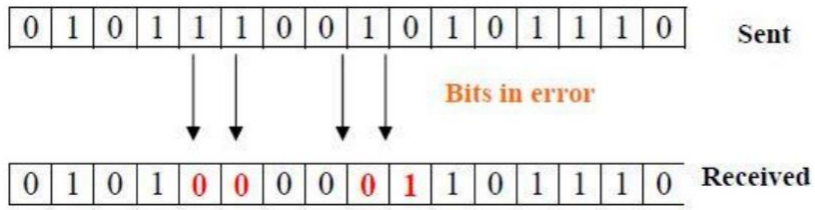
a. Stop and Wait 1. Send window:1 Receive window: 1
b. Go-back-n 2. Send window:16 Receive window: 16
c. Selective Repeat 3. Send window:31 Receive window: 1

a) a-1,b-3,c-2
b) a-1,b-2,c-3
c) a-1,b-2,c-2
d) a-1,b-3,c-3

16. The maximum Throughput value of Slotted Aloha is _____ , when G=1

a) S_{max} = 0.863
b) S_{max} = 0.368
c) S_{max}= 0.184
d) S_{max}= 0.418

17. The following diagram shows the sequence of bits sent and received. Due to some error, bit values have changed (shown in red). What is the burst length?



a.2
b.4
c.6
d.None

18. CRC-32 is one of the commonly used generator/divisor polynomial given by $x^{32}+x^{26}+x^{23}+x^{22}+x^{16}+x^{12}+x^{11}+x^{10}+x^8+x^7+x^5+x^4+x^2+1$ If the length of the message to be transmitted is 'N' bits, what would be the length of actual data sent after applying CRC for error detection?

a) N+16
b) N+32
c) N
d) N+64

19 To guarantee the detection of up to 5 errors in all cases, the minimum Hamming distance in a block code must be _____

A. 5
B. 6
C. 11

D. none of the above

20 During normal IP packet forwarding by routers which of the following field is updated-

a) Source IP
b) Destination IP
c) Time to Live
d) Identification

21. In classful addressing class D addresses are used for

a) Unicasting
b) Multicasting
c) Reserved
d) Large Organizations

22. Which of the following address is a class B host address

a) 230.1.5.20
b) 130.4.5.6
c) 250.29.1.7
d) 30.4.5.0

23. The sender is a router that has received a datagram destined for a host on another network. The logical address that must be mapped to a physical address is _____.

a) The destination IP address in the datagram header.
b) The IP address of the router found from the routing table.
c) Either a or b
d) None

24. _____- is an unreliable connectionless protocol

a) Sliding Window
b) TCP
c) ALOHA
d) UDP

25. Addictive increase is also called as

a) Slow start
b) Congestion avoidance
c) Congestion detection
d) Congestion control